VITAL TRANSFORMATIONS.

TENTH LECTURE OF PROF. AGASSIZ METAMORPHOSES OF CERTAIN MARINE ANIMALS-CREATURES THAT UNDERGO A WHOLE SERIES OF TRANSMUTATIONS-STRIKING SIMILARITY OF ALL

EMBRYONIC ANIMAL FORMS, [FROM AN OCCASIONAL CORRESPONDENT OF THE TRIBUNE.] CAMBRIDGE, Mass., May 30 .- The following lecture was delivered by Prof. Agassiz on the 15th inst.,

before the Museum of Comparative Zoology : Our last lecture brought us to the subject of "Alter-nate Generation" as another mode of multiplication among animals. At first sight this alternation of animal forms arising from each other in successive generations, and yet differing entirely in external aspect, seems like a startling deviation from the original type, and suggests a ready explanation of the diversity among living beings. But on closer examination we find that these atternations are but the oscillations of a prescribed cycle, confined within given limits and returning with unfailing regularity to the starting point. I have not time to explain the details of this curious mode of reproduction, but I will at least give you so much of the facts as will enable you to understand their bearing upon the question of maintenance of type. They are exceedingly suggestive. Indeed the study of the Radiates in general and of Jelly-fishes in particular is one of the most interesting in the whole field of Zoology. Without a thorough knowledge of these animals and their transformations no zoologist at the present time can form correct views of the leading questions in his own department of science. The naturalist who is not perfectly familiar not only with the anatomy of these animals, with their comparative structure, from that of the simplest bud of a Polyp to that of the most complicated Echinogerm, but also with their multiplication and growth, waether from budding, self-division, or

palmontologists of our time have made them the object of their most careful research. GROWTH AND REPRODUCTION OF THE RADIATES. To Siebold, whose investigations on various subjects I have recurred to so often and so naturally in the course of these lectures, and after him, to Sars, the Swedish naturalist; to Steenstrap, the Danish investigator, and to Dujardin, the Frenck zoologist, we owe our first knowledge of the curious phenomena, known as alternate generations. Since their time many younger investigators have added a great deal to our knowledge of the modes of growth and reproduction among Radiates, but these men opened the ground and I like to recall their names for we are apt, in the later and richer barvest, to forget

by whom the seed was really sown.

portance of the Radiates in connection with these inves-

I have stready shown you that Corals, Jelly-fishes, Starishes, and Sea-urchins, or, as naturalists call them, Pelyps (viz., corals of all sorts, sea-anemones, and the like), Acaleph - (lelly-fishes and hydroids), Echinoderms (star-fishes, sea-urchins, and holothurians), constitute a unity, from a structural point of view. I mean by this that they are all built on the same plan of structure, and can be compared in all their parts and reduced to one organic formula. Their anatomy differs in complication, proportion, and distribution of parts, but not in essential features. They constitute a structural unity just as Vertebrates, whether fish, reptile, bird, or mammal stitute a structural unity, being respectively built upon the same plan. In the same way the three classes of Radiates exhibit one plan, more or less elaborated; simplest in Polyps, more complex in the Acalephs, and reaching the highest degree of complication in the Echinoderms. Now, wherever we find unity of structure we find unity of development; and I shall show you that this lowest type of the animal kingdom, the Radiates, has one mode of development common to all its classes, s the highest type of the animal kingdom, the Verte brates, has also one mode of development common to all

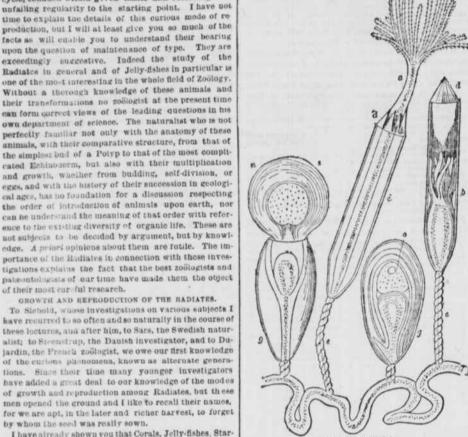
THE CHANGES OF FORM OF A JELLY-FISH. But before we enter upon this wide field of com parison and generalization, let us look at the facts of alternate generation. Our common jelly-fish has four crescent-shaped ovaries so grouped that when you lookidown upon the disk of the jelly-fish from above, they have the appearance of a cross. In these ovarie the eggs are formed. From the ovaries the eggs pass into the central cavity of the body, and find their way out through the mouth into the water. When first dropped from the ovary such an egg is a little sphere, filled with transparent fluid containing a germinative vesicle and germinative dot. This transparent yolk, of a light rose color, in the species of which I am now speaking, becomes rapidly more opaque. Presently the process of segmentation described in a former lecture begins. The yolk divides in halves, inte four, eight, sixteen, thirty-two parts, and so on, till the little sphere is completely kneaded and broken up into the mulberry-like body so well known to naturalists as final phase of segmentation. This body become hollow, peculiar cells collect upon and put out what are called vibratile cilia-fine, highly moveable threads, almost like a feathery down-over the whole surface. The outer envelope gradually thins out to form a mouth. The swimming yolk, while freely moving in the water, by means of these cilis keeps itself constantly turning and rolling in every direction, forward, backward, and sideways, its substance assuming steadily more the structure of a Hydroid. Presently it ceased to be quite round, and becomes oblong, or pear-shaped. A depression takes place at one end, deepening gradually; and as it deepens, the effia become less active, the rotating, rest less little being slackens its speed, pauses, settles on the end opposite the depression, and becomes fixed. The upper end, the margin of an internal cavity, formed by the depression, spreads in four directions, protrudes four folds as it were. These folds change to tentacles, which multiply from 4 to 8, from 8 to 16, from 16 to 32 and so we have a little polyp-like being much like a sea-anemone; with a digestive cavity, a fringe of tentacles, and a somewhat spreading base. It presently outgrows this phase; the body clongates, and in proportion as it rises in hight, the internal cavity deepens, tube-like, through the center of the body. Next, several of transverse constrictions are formed across the body for its whole length; showing themselves as the body for its whole length; showing themselves as slightly projecting folds on the surface, at regular distances from top to bottom of the animal. These folds or constrictions deepen toward the axis, till at last the whole body is divided into a pile of saucer-like disks connected together only in the middle. Every such disk becomes scalloped around the edge, and at this stage of the development the top of the body, with its wreath of feelers, drops off and dies. Next, the upper disk separates from the pile, and as it does, it capsizes turns its hollow center downward andiswims away, a small, free jelly-fish. All the rest follow, and we have a new generation of jelly-fishes as the close of this strange story.

The different phases of this sequence of development were known to naturalists before the connection was detected. The little polyp-like animal which I first described was supposed to be a particular kind of polyp, described was supposed to be a particular kind of polypand was called Scyphostoma; the next phase, when the body had become constricted and was undergoing its transformation into disks, was also known, and in this stage of development it had, like the Scyphostoma, been considered a distinct kind of polyp and named Stroblia; and the scalloped disks had been observed swimming free in the water, and had been taken for a peculiar kind; of felly-fish, and christened Ephyra. Subold first suggested the connection between the Scyphostoma and a jelly-fish. Sars followed the transformation of the Scyphostoma into the Stroblia, and the subsequent breaking up of the Stroblia into a generation of Ephyra. The origin of the whole history remained, however, a mystery; for it did not appear that any of these animals, either Scyphostoma. Strobila or Ephyra had perfect reproductive organs. It was not until the Ephyra was watched and was found to grow into the common large jelly-fish called Aurelia, which has four ovaries and is known to lay eggs, that the cycle was complete. It is most interesting to follow this development. I have in my own study watched the Aurelia's eggs, seen them grow into Scyphostoma, pass from that into the Stroblia stage and break up at last mot Ephyra, which grew to be the true Medusa. I should add that from the base of the Stroblia, which always spreads somewhat like the base of a sea anemone, a bud may arise which grows into a new Scyphostoma and passes through all the phases of Stroblia into Ephyra. and was called Seyphostoma; the next phase, when the always spreads somewhat like the base of a season a and a bud may arise which grows into a new Scyphostoma and pusses through all the phases of Strobia into Ephyra NO CHANGE IN SPECIES.

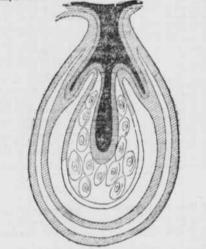
These facts do not in in any way prove that one species of animals may grow out of another species, even though in this case we have as many as four different species referred to as many distinct genera now reduced to one It only shows that the naturalists who had discovered these creatures and described them as distinct genera and species were mistaken in their conclusions; but present information, showing beyond a question that they are only successive stages of growth and transformation of one and the same species, just as certain worms long considered distinct species are now known to be stages of growth of miscut entirely different from them in their adult condition. In the case of our Aurelia there is, however, this very peculiar teature, that out of one egg laid by the Aurelia only one Scyphostoma is born, which at first grows into a situation of the stages of which is finally developed into as many perfect sexual Aurelias, so that out of one Aurelia grathers arise in the end a great many Aurelias, at times as many as twenty and more, each of which is capable of initiating another series of development of the same kind, as the remning basis of the original Scyphostoma may also occasionally do.

Since this curious mode of development, consecutive but quit casting chapters of life arising fromtone primbut quit casting chapters of life arising fromtone primbut quit asting chapters of life arising fromtone primbut of the case of case of the consecutive and control as the control of the case of the consecutive of the description of the case of the consecutive of the case of the consecutive of the case of the case of the consecutive of the case of the case of the consecutive of the case of the case of the case of the consecutive of the case of t It only shows that the naturalists who had discovered but quite distinct chapters of lite acising from tone prim-

trive ezg, became known to naturalists, they have traced other cases of the same kind in the same type of animals, and they find that it is not an exception, but a rule, in certain groups of radiates. The case I have given is one of the most common and float known. But there are many others. The Sarsia, for instance, is a pretty little jelly-fish very common in our harbort, with four fentacles and a long probosous. On this probosous eggs are formed which drop into the water, and, after undergoing the usual process of segmentation, develop into polyp-like bodies which become attached to the seabottom, or to some rock or weed. The upper end of this polyp-like animal enlarges into a club-shaped head, which becomes covered with knobbed tenkacles. This animal, known as Coryna, produces buds from its idea, and thus multiplies into a small community of individuals like itself, attached to one common basis. Among the tentacles of any one of these club-shaped heads, however, may now be seen one or more buds of a different kind from those which gave rise to the community. Thissecond kind of bud has the tubes of a jelly ush; within are colled up four long feelers and a probosots presently it drops, the tentacles unfold, and the bud swims away, a free Sarsia. In due time this Sarsia produces eggs, which in their turn found new colonies of Curyna. Or, take the case of the Campanularia, or that of Calycella.

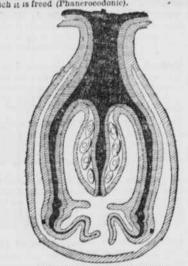


a firsteach expanded. h Hydrauth retracted. c. Hedratheca. Operculum, open. d'. Closed. c. Hydrocanias. f. Hydrothus. Gusangum. n. Accorpt. c. Erg. In Calyoella the community consists of aterile and of orthic individuals; but the pilly inh-like buds are not



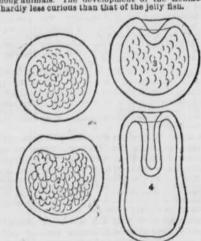
ADELOCODONIC GONOPHORES.

djoining figures show the difference in the structhuse buts, in which the Medusa bud (Adelocoout of Allman), is not detached from those in
a freed (Phanerocodonic).



The regularity of this kind of development is even more striking than the variety of its phases. Whether the generations are more or less numerous there is no deviation in the end. However wide the circle, it returns always to the same starting point. I might show you many more instances of the same kind, but I will rather refer you to works in which you will find the cases I have mentioned and many others in all their details. Two volumes of my own Contributions to the Natural History of the United States are devoted to this subject, and are very fully illustrated. Allman's History of the British Hydroids is an admirable presentation of the Subject, illustrated by species found along the British coasts. To these I may add the second volume of the Catalogue of this Museum relating to the North American Acalephs, by my son, Alexander Agassiz. PHANEROCODONIC GONOPHORES.

Agassiz. Having compared the development of the corals or polyps and that of the jelly fishes, let us look now for a moment at that of the Echinoderms. Here again I must leave out many details of their transformations; but I can give you enough to illustrate the subject I have always in view, viz., the true foundation of affinity among animals. The development of the Echinoderm is hardly less curious than that of the jelly fish.

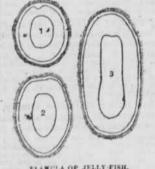


PLANULA OF STAR FIRE. PLANGIA OF SIAR ISBN.

(Asterscanthies berylinus)

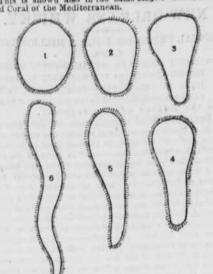
The egg of a star-fish, for instance, is a transparent
spherical body with germinative vesicle and dot, differing in no way from the egg of a jelly-fish or a coral. It
goes through the usual process of segmentation, after
which it floats about a little planula-like embryo bardly
to be distinguished from that of any other radiate. Then

to be distinguished from that of any other radiate. Then a depression is formed just as in the young Polyp or the Acaleph. This depression deepens to form a digestive cavity within, hanging like a loop or bag in the center of the body; the margin spreads a little, and then we have an animal which strikingly resembles a young jelly-figh.

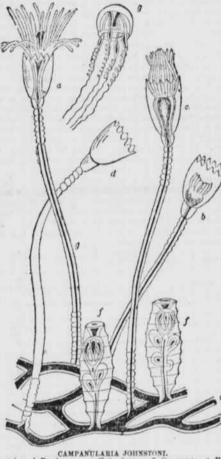


PLANULA OF JELLY-FISH.

This is shown also in the same stage of a Polyp, the red Coral of the Mediterranean.



Presently from the upper extremity of the digestive cavity, which bulces slightly at that end, the pouches of bud-like projections are formed, and here begins this life of the star-fish, as distinct from that of any other radiate. These two pouches develop into two water-tubes, on one of which the upper surface of the star-fish, on the other the lower surface, will be developed, when they finally meet and inclose between them all the internal organs of the Echinoderm. The later phases of the development are most curious. I could show you how an elaborate structure for the support and locomotion of this little embryo is formed, how at last it sinks to the bottom of the water, and how the little star-fish, now quite advanced in life, begins to absorb all the superfluous parts of its own embryo. The locomotive organs and a complicated system of appendages connected with them, the water-tubes on which the two surfaces of the animal were developed, disappear within the young star-fish; it swallows up, so to speak, the first stage of its existence. But I refer you for these details to a little book called seaside studies in Natural History on the Radiates of Massachusetts flay, where you will find the whole story described and flustrated. The development of the Sea Urchins and Holothurians has much the same character. All I have wished to show you is that the mode of development is essentially the same for all Radiates. Up to a certain point of their existence, the embryo, or to use the naturalist's term, the planula of Polyp, Acaieph, and Echinoderm, is so like that even naturalists find it sometimes difficult to distinguish them. I could not, with my rough drawing on the black-board, show you may percéptible difference between the planula of a coral, a jeliy fish or a star fish, as you may see for yourself if you compare the illustrations given above, in which figures published by Lacaxe-Duthlers of the Red Coral, by myself of the Aurelia, and by my son of the star-fish are placed side by side. I think this fact is

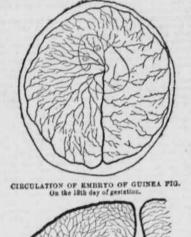


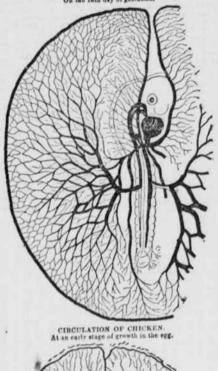
a. b. c. d. Trophesome e. Hudnobying f. Gonosome. a. Hydranth expanded b. Hudeanth drawn in. c. Hydranth half open. d. Empty Hydrotheca. f. Gonasien. g. Hydrocaulas.

Here we have a community of Hydroids of a species known as Campanularia Johnstoni. All the different individuals there united as one community are buds derived from the development of a solitary egg, and on that account are considered by him, in conformity with Huxley's definition, as one individual, including the free jelly-fish born from them. In this community, all the sterile individuals are considered as a unit, and called Trophosome, and all the fertile individuals as another unit, under the name of Gonosome; while the single sterile individuals have received the name of Hydranths, the sheath of the head being called Hydrotheca, the stem Hydrocaulus, the creeping and anostomology base Hydrorhixa, and the last two together Hydrophyton. The various combinations of structural complication of the fertile individuals have also received appropriate names, as may be seen in the same wood-cut. But while I recognize the advantage of such a specific nomenclature to give precision to the description of a limited group of animals, I cannot overlook the great difficulties arising from such a proceeding whenever we attempt to trace the more general relations which bind the very same beings into larger groups of a higher value. Prof. Aliman's nomenclature cannot be extended to all the members of the class of Acalephs; it is even incompatible with the peculiar structural features of the siphonophores in which I have long ago shown an identity of structural complication with the Hydroids, and if we were to attempt an application of this nomenclature to the classes of Polyps or Echinoderms, we should entirely fail. And yet nobody will deny that Polyps and Acalephs belong to one and the same primary division of the animal kingdom, whatever may be said of the Echinoderms. Again, among Echinoderms themselves, naturalists have adopted a special nomenclature for t

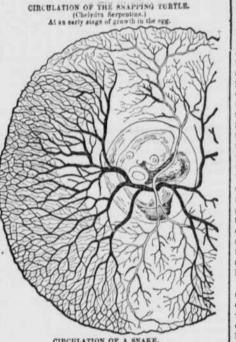
STRIKING SIMILARITY OF ALL FORMS IN EMBRYO. Let us now turn our attention to an entirely different type. A fish, a reptile, a bird, a quadruped, a man are all verterbates by their plan of structure and by their mode of development, and yet they are entirely distinct have shown you, in a former lecture, that the structural plan for all verterbates consists of a central axis with a solid, mostly bony arch, above, inclosing the nervous system, and a similar arch below, inclosing the nervous system, and a similar arch below, inclosing the nervous system, and a similar arch below, inclosing the nervous system, and a similar arch below, inclosing the nervous system, and a similar arch below, inclosing the nervous system, and a similar arch below, inclosing the programs of digestion, reproduction, circulation and respiration. A glance at their embryology will show us that they are united by their development as closely as by their anatomy. Suppose we have here the easy of a vertebrate, of any vertebrate, a fish, a reptile, a bird, or a ngammal; the result of the segmentation is the formation of a layer of more completely kneaded yolk substance on one side of the yolk. One end of this layer thickens more than the other. Along the middle, a slight depression is formed, not by a sinking of the center, but in consequence of the rising and swelling of the sides which leads to the formation of a kind of furrow. It is in fact only the folding upward of the upper margins; and this goes on till the inargins meet and inclose a cavity. This depression in the longitudinal axis of the germ is the beginning of the arch within which the nervous system is contained. Then the lower margins of the germ layer fold downward in the same way, till they also megt and farm the lower cavity in which the other yatems of organs are inclosed. Here a little fold occurs which is the first indication of the ear; here transverse fissures are developed which are to be the gills; for gills exist in all vertebrates, including man, in the embryonic state. As the development goes on, the germ rises more and more above the yolk, the connection becomes less and less, the yolk hangs like a hag below the body, and either is slowly or more rapidly absorbed into it, as the case may be, in different vertebrates, and the as members of different classes of the vertebrate type. I have shown you, in a former lecture, that the structural

liftle animal is finally freed from all connection with the parent. Compare a number of vertebrates from different classes in different stages of growth, and you will be astonished at their great resemblance. Take them, for instance, at an early stage of embryonic life, before the germ rises very high above the yolk. At that time blood-vessels extend over the whole yolk, some of which bring the blood to the heart, while others distribute it to all parts of the surface. At this point of the development there are two great vessels from which the blood circulates symmetrically on either side of the body, while both finally unite in a circular vessel. Whether we take a turtle, a snake, a bird, or a mammal at this phase of development, the difference in their circulation is so singht that I could with difficulty show you the distinction on the black-board. Only very careful and detailed drawings such as are here reproduced from the works of Ratake, Tander, Bishoff, and my own would give it to you. We have a number of vertebrate embryos drawn here so that you may compare them in a more advanced stage. Here are two figures of a young snake, and here are turtles at about the same age.











CIRCULATION OF A VISH.

(Zeaross Viriparia.)

Before hatebing.

You see how very similar they are. The body of the snake is hardly more clongated than that of the the the form tapers into a tail in both, but not more in one than in the other. Look at the front view of the same snake a little more enlarged. The mouth is represented by a broad transverse slit. The indentations are fissures which, when fully closed, will form the nostrils; the hare-lip in man is only the remains of this earlier condition which exists in the human embryo as well as in fishes and reptiles. Compare the face view of the turtle and snake; you will find the turn of the mouth, the position of the gills, and the arrangement of all the parts identical. Here is the embryo of a dog; compare it with that of the turtle; are not the folds of the nostrils, the position of the eye, the gill fissures, the obtuse sumps for limbs, the same in both † Here is a young deer at the same stage of growth, also with the same features. You need only remember the slight, fleet limbs of the adult, and compare them with these reptile-like flappers to satisfy yourself of the truth of my assertion, that the higher animals of any type pass through the forms of the lower ones in their development. Remember that these figures are not made with any intention to show these resemblances. Selected for that purpose, the identity might be made much more striking. I have simply taken such illustrations as a could find in works of investigators who were studying embryos without special reference to their fundamental relations. But, even taken by chance, they are too striking to be everleoked. The human embryo resembles, point for point, the young dog and the young deer —And now let us return to the lowest class of verteurates —the fishes. A young fish exhibits the same traits of physiognomy which we observe as characteristic of the embryo of the reptiles, the birds, or the mammalia. There is, in fact, no more difference between these different embryos than between the young CIRCULATION OF A FISH.

THE FASHIONS.

SUMMER STYLES IN DRESS AND BONNET. SUBDURD COLORS MOST POPULAR-HOW TO TRIM BONNETS-A DELICIOUS PROFUSION OF FLOW-

ERS-POLONAISES AND REDINGOTES. The colors exhibited in the costumes of the eason are exceedingly dainty and fresh. A toning down of all brightness is more than ever discernible. The different shades of one color are undiminished in variety; in violet, a beautiful intermingling of shades ranging from the deep Tyrean royal purple to the palest rosy mauve that frames the pansy. Notwithstanding the backwardness of the season, the few delicious days we have enjoyed have brought forth the May flowers in not only fresh costumes but new bennets. Some of the Summer bonnets are so exquisitely fabricated that it is difficult to believe them the work of mortal ungers. The style of bonnets as the style of trimming differs greatly this season. There is no stereotyped mode as heretofore. Dress bonnets have a profusion of flowers, masses of exotics of as great a variety as you would present to your friends in culling a bouquet from your gardon.

But hats have a simple bunch of cut flowers

with long stems tied together with a wisp of oats, straw, or a bramble of wild rose fastened at the side. Others have the crowns covered with beautiful masses of violets, or of pansies, or of heliotrope without intermixture. The Victoria, an exceedingly quaint yet coquettish shape, made its debut a month ago, copied from the fashion plates of the beginning of Victoria's reign, offering an immense contrast to the French Rabagas and sailor hat which have a rakish, half-tipsy air exceedingly demoralizing to a comely American face. The Victoria has at least the appearance of modesty, is really Quaker-like in its simplicity and grace, and absolutely affords some protection to the face and head. The brim projects rather like the hood of a phaeton and is faced with silk-black, if chosen, and piped with another color; the sides come nearly to the ears and are tied down Gipsy-fashion; there is abundance of room inside the front for the high coiffure, and the crown is sufficiently high for the comb. The trimming is of large flat bows of ribbon, a feathered aigrette and a petite flower or two hre set against the crown. The most coquettish face losses its piquancy in a bonnet devoid of shade, unless peeping from beneath the lace drapery or fringed canopy of a parasol; broadbrimmed hats are only intended for Watteau shepherdesses in pastoral resorts. Naturally straw is the most suitable material for the Victoria. A pretty traveling or morning bonnet was made of gray chip trimmed with black velvet, straw trimmings of the same color, and white field daisies. Another showy chip was literally a mass of violets deliciously perfumed, black velvet ribbons and black lace scarf. These styles can be worn with any costume, so with black lace thonnets; but if one needs a bonnet made of turquoise silk-this is a soft twilled silk-to match a costume in color, it is necessary always to have beside, a bonnet of straw or black lace. Orepe is largely intermixed with straw in bonnets, and another novelty is the making over black frames, hats of white guipure and écru Yak inserting; and over white lace frames, black and éers guipure in aiternate rows, brightened by some charming bunch of wild flowers, such as scarlet popples, egiantine, the pale pink of hare bells or scarlet orange, of nasturtium mingled with the green of geranium, or blood-red blossoms of pomegranate. To the delicious profusion of flowers there is added

also a revived passion for lace. Lace strings to black lace bonnets, fastened below, the chin with a flower must be managed skillfully to be becoming; especially must the pale-cheeked ones avoid violets and green, the property of the blonde, who also appropriates the blue forget-me-nots and delicate corn flower for string adornment; but the sallow face can borrow a flush from mossy pink buds, and brilliant brunestes can employ a goldenpink buds, and brilliant bruncites can employ a goldeneyed pansy, or little spray of mignonette, even a scariet bud, provided the color be not too vivid. While faces past their first youth need the softening of lace, youth need not disdain its beautifying influence. But there are ornaments for all tastes and all ages beside the flowers, in leaves of light silvered bronze, oxidized silver ornaments of medieval styles, arrows of silver, jet and pearl; buckles and pins of jet, filarces gilt and bronze. It every lady will be sufficiently strong-minded to resist the temptations of bonnets not suited to her peculiar style and satisfy herself as to her individuality in complexion and hair, she will arrive at the secret of French perfection in toilet details, wherein the plainest groman possessing that gift of tact and sense of fitness makes herself at least attractive and fascimiting. How charmingly pastoral are to be the Midsummer fashions! "Nothing but a thin gray stuff or bine innen, don't you know, all covered with tamboured work, like old-fashioned muslin curtains; but it is the economy of the thing, don't you see. Women are coming to their senses." So fondly do men deceive themselves. But this premeditated rusticity and simplicity are only so much dust. These beautiful gray and buff thin robes are batiste, costing as much as \$75, and another style still thinner, of drab or gray, of error like coarse canvas, is called cotton grenadine, and into its meshes are worked, in two or more colors, in chain stitch and satin stitch, palms and ferns, and lities with bending stalks, floral vines and little buds. This costs as highs as \$80. eyed pansy, or little spray of mignonette, even a scarlet and blies with bending stalks, floral

little buds. This costs as high as \$80. Yet so pretty is it, one scarcely hesitates. Yet another superb costume is of black silk canvas grenadine, richly embroidered in masses of flowers and vines in two shades of purple floss silk. The écru polnaises and costumes are embroidered in two shades of linen thread, dark and light; the darker gray and drab batiste is worked with a lighter color. In another style, the embroidered flounce turns the skirt, the overskirt is worked all over with polks dots and trimmed with Yak lace; the jacket matches the overskirt, a simulated vest formed by Yak inserting. These quietcolored dresses are generally brightened by sashes and bows of some vivid color. A quaint style is of damask linen unbleached, with blue, red or buff woven borders. These are trimmed with a linen lace, into which a bright thread of color is interwoven. The dark indigo-blue linen in polonaises is rather showy, embroidered heavily in white linen floss; the dark brown embroidered in still darker brown is preferable for the quiet tastes of the traveler. A cheaper style in plain linen is braided with white, put up in boxes as low as \$10, increasing in expense in accordance with the amount of work; a thick batiste or species of linen in suits comes embroidered on ruffles, pockets, cuffs, and sashes in white floss, ranging in price from \$20 to \$40. Batistes, polka spotted, are

batiste or species of linen in suits comes embroidered on rufflee, pockets, cuffs, and sashes in white floss, ranging in price from \$20 to \$40. Batistes, polka spotted, are sold for polonaises to wear with plain batiste skirts, very much ruffled. This material also comes lace-striped, figured in damask, and square marked like canvas, Granadines are also striped with satin and with lace-polita-dotted and damask-figured, rivaling in popularity the plain canvas grenadine, as new things will sometimes make us forget old favorites. Still many will cling to first affectious. Plain grenadines made over or on black sik will still be fashionable. The basque must be tight-fitting, with a short overskirt, trimmed at discretion. A black slik skirt was trimmed with three wide plaits, and for the beading a wide bias puff, plaited. A little apron overskirt was trimmed with loose coat-sleeves. For the street it should be lined with slik, but for simple home dress, and where coolness is desired, the slik lining of the waist can be cut low.

For traveling costumes, everything is made of soft fabrics; for inexpensive snits, de baize is recommended, only 50 cents a yard, requiring from 20 to 30 yards. This is all wool, thus defying atmospheric changes, will not shrink, is quite strong, and has been made up already in the very popular Alexandra redingote changes, will not shrink, is quite strong, and has been made up already in the very popular Alexandra redingotes has been made up already in the very popular discandra redingotes one-fronted and belted back, the personification of comfort and case. This is double-breasted, has two rows of buttons, and large, deep pockets and cuffs, and a broad looped-sash, which is confined by a buckle and attached to the left side. It is not necessarily lose-fronted; if not becoming to the form the belt can clasp the entire waist, A great number of the Alexandra redingotes has been made up in every variety of material. For batists, however, so delicate a fabric by preferred in the Wattean redingot

duster made up into a very long, loose potonaise is as indispensable as the water-proof. Yet another material for cool mornings as the soft mixed are plain flannel for redingotes. These are ornamented with two loves obstitutions. The Errusaen cloth, Turkish towoling, comes in all simple, quiet colors, or woof of brown, purple, or green showing through the white, rough over-casting. This is both plain and striped, costing; if so a yard. Inexpensive traveling costumes are made in a gray mehair at 40 and 50 cents a yard of smooth surface.

The style of a garment so much depends upon the draping, that we have taken especial pains to ascertain from unquestionable authority all about this important matter. We have two new styles this season, or perhaps three. One redingote requires long straight fronts, innocent of wrinkin or folio, and closed, the back breadth being vary full. Strings are attached beneath to the back, producing the nocessary bouffand effect. Another leaves the front oper, the skirt draped in the back and ruches up the fronts; a long point. Yet another has the siles looped high-not at the hips, and further behind, very nearly to the waist. A full polonaise of last year, by opening the front and Graping as described, is very easily turned into a Lashionable redingote. Many of the furnishing houses exhibit very large, long gray linen dusters, accompabled by skiris of striped percale, black and white and black and gray, called "overails." These are imported from France, especially (10 be worn over an exponsive or delicate traveling suit, and are considered quite cheap at \$12. One fluid, also, undreased kid gloves for traveling, made with a deep cuff to protect the wrist, Pretty habit skirts of line white linen for traveling and morning costumes are made with a farmic collar, admitting of a sort of clerical band fastened with linen buttons, which are, however, removed directly by young ladies and some favorite jewied neck-stud substituted. Variety ties antiable for traveling and morning costumes are made

that "fly-away" air, which has been an oft urged objection.

In seven years our demand for silks has increased 50 per cent, and for silk ribbons it has doubled. French lades, do not distain to wear pretty black French lades, both for trimming and for wraps, but American indies trim only with inread, and if a liama or French lades, sadque finds its way to their wardrobes, it is only to save from too constant wear the thread sacque or shawl costing its hundrods. In lingerie, are quant linen collars with an outward curve like the fip of a sea shell, the stiff Medici frill of lade standing inside; in those fraises we also find plattings of gossamer-like linen camprie, and exquisite tes of the same delicate material, with floundings of lade. These upright fraises or iriliare extremely becoming to the back of the neck in the present style of the coifure. Fortunately they diminish gradually before touching the ears, and are quite of moderate which at the front of the corsage, disclosing enough of a pretty throat to recompense one for the rasping at the back. For a charming neck-lie, make loops of crept de cheme in any becoming color, trim one broad end with black silk, cover that with lade insertion and edge it with a lade dounding. For morning, wear pretty dotted percale outle and collars and plaited ruffice.

CURRENT DISCUSSION. DECORATING SOLDIERS' GRAVES.

sults. It is no sentimental concession either; for, as w suits. It is no sentimental concession either; for, as we look upon it, it would have a beneficial effect, and again but highten the glory which, on the 30th, shall gather halo-like round every tombstone marking the buriation of the Union soldier. The contrast of itself would be suggestive, and might lead to valuable reflection.

THE CAMPAIGN OF 1868.

A correspondent of The New-York Tribuns states, as a fact not widely known, that Gen. Frank Blair expressed a willingness to withdraw from the Democratic Fresidential ticket in 1888, after the October elections had shown the drift of public opinion; and that his preference was the substitution of Chase for Seymour as the head of the ticket. We were not award that there was any secrecy about this. Certainly Gen. Blair made no secret of it at the time. It is true that he sought the nomination very carnestly, but it is also true that from the first evidence that the position in which the Broadhead letter had placed him would weaken the ticket, he placed himself at the disposal of his friends, to drop him or retain him, as they thought best. The Thenexe correspondent errs, however, in has statement of the reason why Chase was not substituted for Seymour after the October elections. He says if was because there was no power in the National Committee to make the change. But it was really because the Tammany Hall crew, who controlled the Committee, were more anxious for success in New-York thas for success throughout the country. Tweed was then in the Zenith of his power, and he and his friends had determined that it was necessary for the continuance of their career of plunder that the Legislature of New-York should be Democratic. They believed this result was more certain under Seymour than under Chase, and probably they were right. Valiandigham was the strongest advocate of the proposed change is the West. He had been a Chase man in the New-York Couvention, and was defeated for Congress in the October election of that year. He always believed that Chase would have defeated Grant if nominated it he first place; and he was hopeful or success under Chase, even if nominated less than a month before the Prosi-A correspondent of THE NEW-YORK TRIBUNE first place; and he was hopeful of success under Cua even if nominated less than a month before the Pro-dential election.

TROUBLES OF SETTLERS ON THE SIOUX RESER-

TROUBLES OF SETTLERS ON THE SIOUX RESER
Prom The Denver (Col.) Rocky Monatain News, May M.

A curious complication has arisen in Nebrasks in connection with the Sioux reservation. In
1868, Gens. Sherman and Augur concluded a treaty with
the Sioux, assigning them to certain reservations. Onewas within the limits of the State of Neoraska. Notwithstanding this, the lands were surveyed and offered
for sale. The result is that upon this Sioux reservation
within the State of Nebraska there are now some 5,009
bonn fide settlers, who have taken the initial steps
which entitie them to homesteads. Within a few
months, however, it has been discovered that these lands
could not, under the Sioux treaty of 1868, be surveyed,
as they were reserved to the Sioux. These settlers declime to give up their lands; and to further complicate
matters the State of Nebraska has come to the aid of
the settlers, and maintains that the General Government had no right to set aside a reservation within the
State without the consent of that commonwealth. The ment had no right to set aside a reservation within the State without the consent of that commonwealth. The consequence is that the Interior Department has ap-pointed a commission to negotiate with the Shoux for that portion of their reservation which has thus inad-vertently been placed upon the market and occupied. The names of the commission have not been made public.

PEACE OF FORCE BETTER THAN ARMED STRIFE.

From The Richards Despirate.

When Congress assembles next December it will see Londana governed by the Federal beyond a scalariety as even a was under the grin rule of a Provisional Governor in subserver-enstances times. If the easy-going gratients who made long speeches, and found for more collers, even up to the last oay of the sension, the their work, they have mighty tongs consequence.

Very true, Congress is responsible, and so is the Extension, ready for its mational disgrade, and Congress with find the tough subject, which it dodged at its last session, ready for it when it again meets. But The Tribune in the sension of the measures of the tyrang toward the South is concerned, the most internal, the server of the sension of the measures of the tyrang toward the South gives them they morning features.

The TRUE SPIRIT OF BROTHERHOOD. PEACE OF FORCE BETTER THAN ARMED STRIFE.

THE TRUE SPIRIT OF BROTHERHOOD. THE NEW-YORK TRIBUNE has a long and rell tempered remake to the toolian protest against eperating Confederate and Union graves at the same me. It well says:

decerating Confederate and Union graves at the same time. It well says:

And yet, shall we be decimed unpatriotic or disloral if we say that there seems somehow in this pristing up of resuments at the deceration of the graves of deal decimies sometiming trivial and unstrow; sometimes not entirely working a great and magnatimens people?

We copy another passage, and can only wish that such expressions and feelings were more common at the North. It shows that the kindly spirit of the great founder of The Tgaintone toward the similar South state animates those who now centrof it.